Field/Oil & Gas Characteristics

Lisbon Field

- 23 Producing (or shut-in) Wells
- 10 Abandoned Producers
- 5 Injection Wells
- 4 Dry Holes

Oil Characteristics

- Oil Gravity – 54-62.6° API
- Sulfur – 0.2%
- Color – Yellow to Red

Gas Characteristics

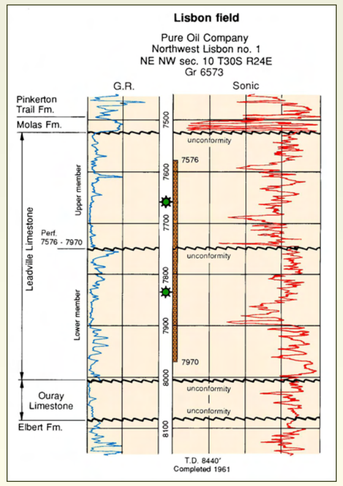
- H_2S – 1.2%
- CO_2 – 21% (rn. 2.2-35.6%)
- Helium – trace-1.1%
- BTU – 470

Discovery Well

- Pure Oil Company, #1 NW Lisbon USA
- T.D. – 8440 ft
- Completed January 5, 1960
- IPF – 4376 MCFG, 179 BOPD
- Initial Pressure – 2713 psia
- GOR – 1417-3153:1

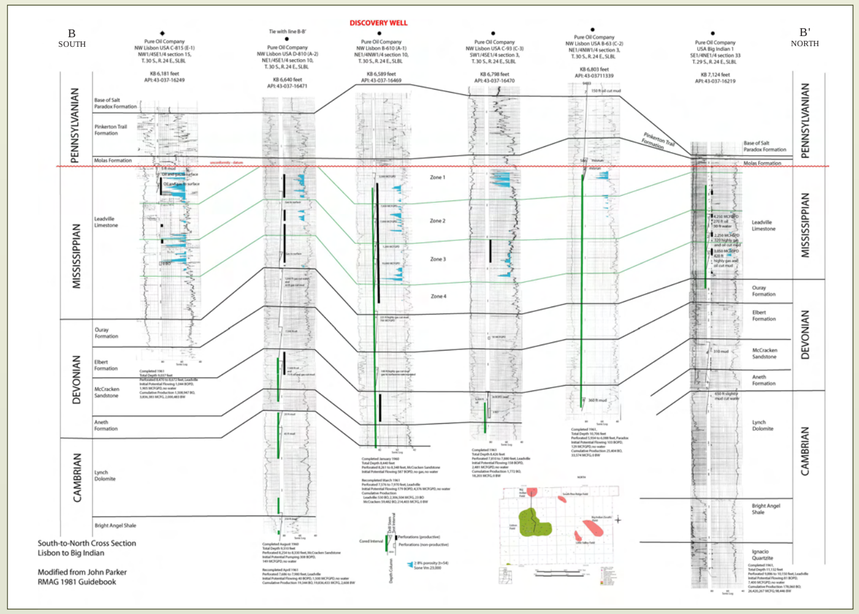
Reservoir Data

- Productive Area – 5120 acres
- Net Pay – 225 ft
- Porosity – 1-21%, average 5.5%
- Permeability – 0.01-1100 mD, average 22 mD
- Water Saturation – 39%
- Bottom-hole Temperature – 53°C to 73°C
- Type of Drive – Expanding Gas Cap and Gravity Drainage



Type log for the discovery well at Lisbon field. Almost all of the intervals of porosity that can be identified on the wireline logs are associated with dolomitization and dissolution of the massive Leadville Limestone.

Log Cross Section Across Lisbon Field



On this S-N cross section, the intervals of log porosity >8% are shown in light blue (■). This porosity is associated with dolomitization and dissolution of the massive Leadville Limestone. Note that the intervals of log porosity do not correlate from well to well. In addition, the porosity is not consistently related to unconformities or to zone boundaries.

Principal Depositional Facies in Lisbon Field

High Energy, Open-Marine Shoal

Crinoidal/Skeletal Grainstone/Packstone with Rugose Corals

RC = Rugose Coral

Note: Black areas contain pyrobitumen, not mud

Moderate Energy, Restricted Marine

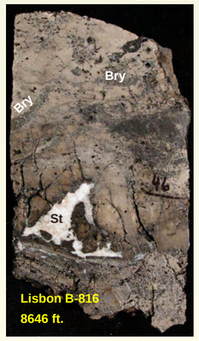
"Hard" Peloid Shoals, Peloidal Grainstone/Packstone

Moderate Energy, Open-Marine Shoal Flank Facies

Peloidal/Skeletal Packstone/Wackestone

Moderate- to Low-Energy, Open Marine Buildup Facies

(Possible "Waulsortian" Facies) Peloidal/Skeletal Packstone/Wackestone



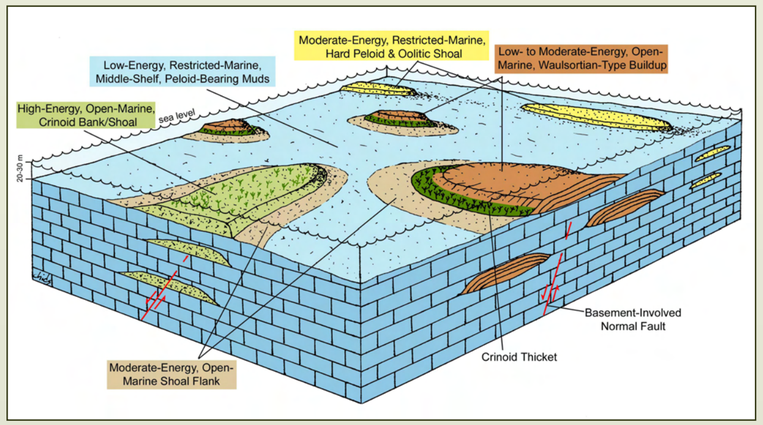
St = Stromatactis (?)

Bry = Bryozoans

Low-Energy, Restricted Marine, Middle Shelf

Skeletal/"Soft" Peloidal Wackestone/Mudstone

Leadville Depositional Environments



A generalized depositional block model